

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF PENNSYLVANIA**

Neuro and Cardiac Technologies, LLC,

Plaintiff,

v.

Neuronetics, Inc.,

Defendant.

Civil Action No. _____

Jury Trial Demanded

ORIGINAL COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff Neuro and Cardiac Technologies, LLC files this Original Complaint for patent infringement against Neuronetics, Inc., alleging as follows:

NATURE OF THE SUIT

1. This is a claim for patent infringement arising under the patent laws of the United States, Title 35 of the United States Code.

THE PARTIES

2. Plaintiff **Neuro and Cardiac Technologies, LLC** (“**Plaintiff**” or “**Neuro-Cardiac**”) is a Wisconsin limited liability company with its principal place of business located at 4350 South 116th Street, Greenfield, Wisconsin 53228.

3. Defendant **Neuronetics, Inc.** (“**Defendant**” or “**Neuronetics**”) is a Delaware corporation with a principal place of business located within this District at 3222 Phoenixville Pike, Malvern, Pennsylvania 19355.

JURISDICTION AND VENUE

4. This action arises under the patent laws of the United States, 35 U.S.C. § 101, *et seq.* This Court’s jurisdiction over this action is proper under the above statutes, including 35

U.S.C. § 271, *et seq.*, 28 U.S.C. § 1331 (federal question jurisdiction), and § 1338 (jurisdiction over patent actions).

5. Neuronetics is subject to personal jurisdiction in this Court. In particular, this Court has personal jurisdiction over Neuronetics because Neuronetics has engaged in continuous, systematic, and substantial activities within this State, including substantial marketing and sales of products within this State and this District. Furthermore, upon information and belief, this Court has personal jurisdiction over Neuronetics because Neuronetics has committed acts giving rise to Neuro-Cardiac's claims for patent infringement within and directed to this District.

6. Upon information and belief, Neuronetics has committed acts of infringement in this District and has one or more regular and established places of business within this District under the language of 28 U.S.C. § 1400(b). Thus, venue is proper in this District under 28 U.S.C. § 1400(b).

7. Neuronetics maintains a permanent physical presence within the Eastern District of Pennsylvania, conducting business from at least its location at 3222 Phoenixville Pike, Malvern, Pennsylvania 19355.

8. Upon information and belief, Neuronetics has conducted and does conduct substantial business in this forum, directly and/or through subsidiaries, agents, representatives, or intermediaries, such substantial business including but not limited to: (i) at least a portion of the infringements alleged herein; (ii) purposefully and voluntarily placing one or more infringing products into the stream of commerce with the expectation that they will be purchased by consumers in this forum; or (iii) regularly doing or soliciting business, engaging in other persistent courses of conduct, or deriving substantial revenue from goods and services provided to individuals in Pennsylvania and in this judicial district.

9. Venue is proper in the Eastern District of Pennsylvania pursuant to 28 U.S.C. §1391 and 28 U.S.C. § 1400(b).

THE PATENT AT ISSUE

10. Mr. Birinder R. Boveja is a prolific inventor, named as an inventor on over 30 issued United States Patents, more than half of which claim inventions related to neurostimulation systems and methods.

11. This cause of action asserts infringement of United States Patent No. 6,366,814 (“the ’814 Patent”).

12. The ’814 Patent, entitled “External Stimulator for Adjunct (Add-On) Treatment for Neurological, Neuropsychiatric, and Urological Disorders,” duly and legally issued on April 2, 2002, from U.S. Patent Application No. 09/751,966, filed on December 29, 2000, naming as inventors Mr. Boveja and Alok Sarwal. A true and correct copy of the ’814 Patent is attached hereto as **Exhibit A** and is incorporated by reference.

13. The ’814 Patent is a continuation-in-part of U.S. Patent Application No. 09/178,060, filed on October 26, 1998, which issued as U.S. Patent No. 6,205,359 on March 20, 2001.

14. Neuronetics has not obtained a license to the ’814 Patent.

15. Neuronetics does not have Neuro-Cardiac’s permission to make, use, sell, offer to sell, or import products that are covered by one or more claims of the ’814 Patent.

16. Neuronetics needs to obtain a license to the ’814 Patent and cease its ongoing infringement of Neuro-Cardiac’s patent rights.

17. Plaintiff Neuro-Cardiac is the owner and assignee of all rights, title, and interest in and under the ’814 Patent.

18. Neuro-Cardiac has standing to sue for infringement of the '814 Patent.

GENERAL ALLEGATIONS

Accused Product

19. Upon information and belief, Neuronetics makes, uses, sells, offers to sell, and/or imports into the United States a Transcranial Magnetic Stimulation (“TMS”) Therapy System called the NeuroStar TMS Therapy[®] System (hereinafter, **“NeuroStar TMS System”** or **“Accused Product”**).

20. According to the “Neuronetics Timeline” on Neuronetics’s website, *available at* <https://neurostar.com/neuronetics>, “Chip Epstein and Kent Davey invented and patented the first iron core coil” in 1998.

21. According to the “Neuronetics Timeline” on Neuronetics’s website, *available at* <https://neurostar.com/neuronetics>, Neuronetics was founded in 2003.

22. Neuronetics was founded in 2003.

23. According to the “Neuronetics Timeline” on Neuronetics’s website, *available at* <https://neurostar.com/neuronetics>, designs began on the NeuroStar System in 2004.

24. Design began on the NeuroStar System in 2004.

25. According to the “Neuronetics Timeline” on Neuronetics’s website, *available at* <https://neurostar.com/neuronetics>, the first NeuroStar system was sold in 2008.

26. The first NeuroStar system was sold in 2008.

27. Page iv of the NeuroStar TMS Therapy[®] System USER MANUAL, 52-4US1E-000 Rev B (November 2013), *available at* <http://success.neuronetics.com/system/files/7/original/files/assets/basic-html/index.html> (**“NeuroStar TMS User Manual”**) states, under “Intended Use and Indication,” “NeuroStar

TMS Therapy[®] is indicated for the treatment of Major Depressive Disorder in adult patients who have failed to achieve satisfactory improvement from one prior antidepressant medication at or above the minimal effective dose and duration in the current episode.”

28. The NeuroStar TMS System includes an external pulse generator.

29. The NeuroStar TMS System includes a treatment coil, which is an enclosed electromagnet with push-button controls.

30. The NeuroStar TMS System includes a treatment coil that generates a pulsed magnetic field that penetrates the skull and reaches the patient’s cortex when the treatment coil is placed against the patient’s head.

31. The NeuroStar TMS System includes an external pulse generator for neuromodulation treatment of neurologic disorders.

32. The NeuroStar TMS System provides a therapeutic neuromodulation technique used for the treatment of patients with major depression.

33. The NeuroStar TMS System is indicated for the treatment of Major Depressive Disorder in adult patients who have failed to receive satisfactory improvement from prior antidepressant medication in the current episode.

34. The NeuroStar TMS System includes a power source.

35. A Mobile Console in the NeuroStar TMS System houses the power and processor modules and provides support for the mast, the gantry, and the display arm.

36. The environmental and facility requirements for the Mobile Console Power in the NeuroStar TMS System include a 120 VAC, 20A dedicated circuit.

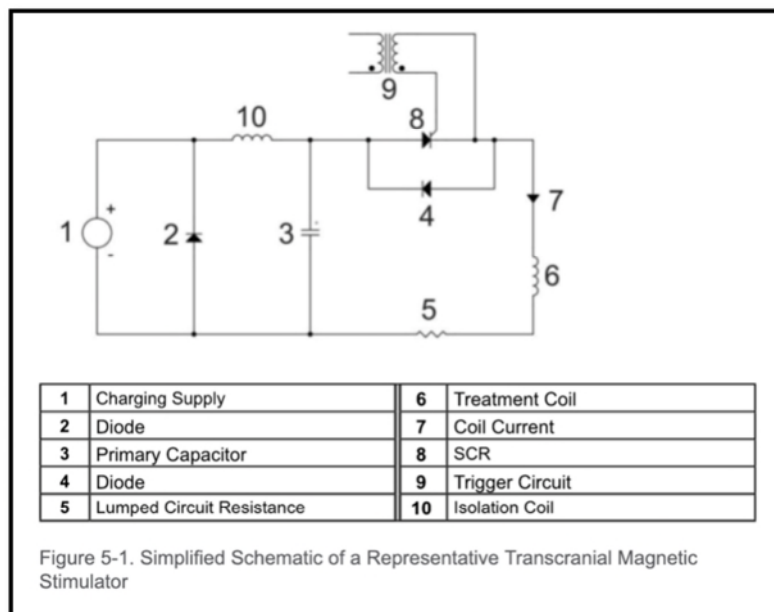
37. The NeuroStar TMS System includes a Treatment Coil, which applies TMS pulses to the patient’s head to stimulate the brain.

38. The NeuroStar TMS System includes circuitry to provide electrical signals.

39. The NeuroStar TMS System is a computerized electromechanical instrument that produces and delivers brief duration, rapidly alternating (pulsed) magnetic fields to induce electrical currents in localized regions of the cerebral cortex.

40. The NeuroStar TMS System includes a trigger circuit for switching a semiconductor switching device to the “on” state, which applies voltage stored in a capacitor to the treatment coil.

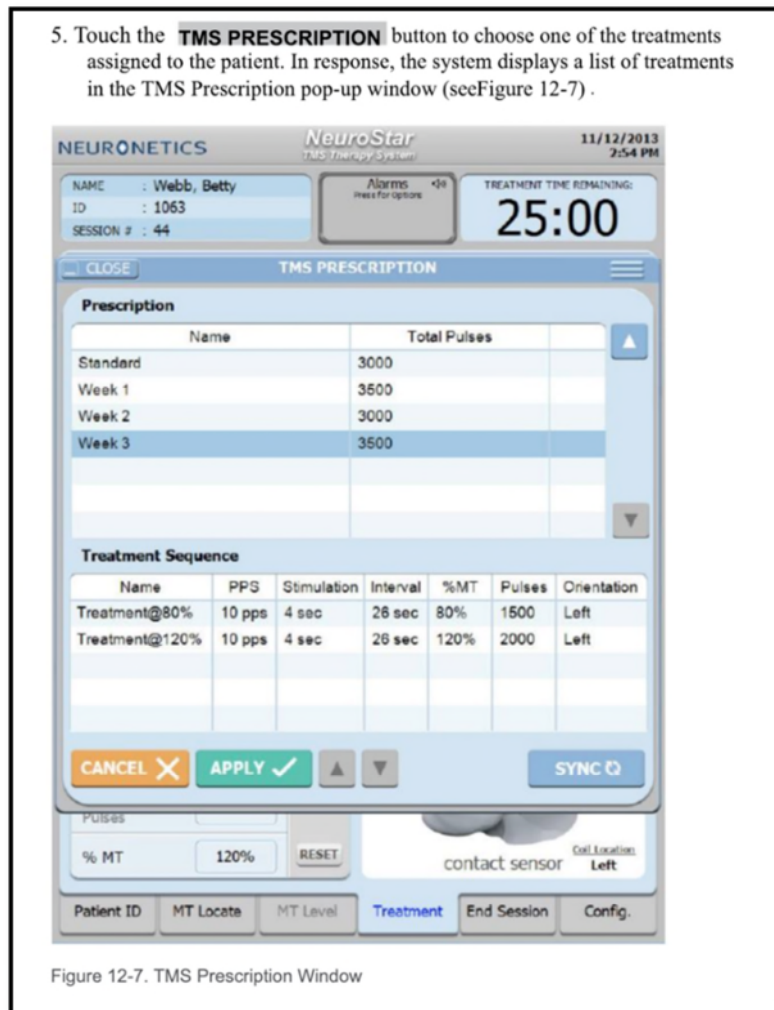
41. Figure 5-1 of the NeuroStar TMS User Manual illustrates a simplified schematic of a representative transcranial magnetic stimulator:



42. Upon information and belief, Figure 5-1 of the NeuroStar TMS User Manual illustrates a simplified schematic of the transcranial magnetic stimulator of the NeuroStar TMS System.

43. The NeuroStar TMS System includes at least two pre-determined programs to control the electrical signals generated by the pulse generator of the NeuroStar TMS System, whereby neuromodulation treatment is provided.

44. Figure 12-7 of the NeuroStar TMS User Manual illustrates a list of available treatments in a TMS Prescription pop-up window:



45. According to the NeuroStar TMS User Manual, the number of “Programmable Pulse Sequences” is “Limited only by the storage capacity of the TMS TrakStar computer.”

46. The NeuroStar TMS System provides neuromodulation treatment for at least one of depression, migraine, partial complex epilepsy, generalized epilepsy, involuntary movement disorders, dementia including Alzheimer's disease, neurogenic/psychogenic pain, obsessive compulsive disorders, urinary incontinence, and bladder control.

47. The available treatments referenced in Figure 12-7 of the NeuroStar TMS User Manual are capable of being modified to modify the electrical signal delivered by the NeuroStar TMS System.

48. The NeuroStar TMS System includes a selection mechanism where one of at least two treatment programs may be selectively operated.

49. The NeuroStar TMS System provides treatment programs that consist of unique combinations of parameters comprising pulse amplitude, pulse width, frequency of nerve stimulation, and on-off time.

50. Further discovery may reveal additional infringing products and/or models.

51. Upon information and belief, the Accused Product is offered for sale and sold within the Eastern District of Pennsylvania.

52. Neuronetics has infringed and continues to infringe (literally and/or under the doctrine of equivalents), directly, indirectly, and/or through subsidiaries, agents, representatives, or intermediaries, one or more claims of the '814 Patent including at least Claim 1 by making, using, importing, testing, supplying, causing to be supplied, selling, and/or offering for sale in the United States the NeuroStar TMS System.

53. Neuronetics induces its customers' infringement of the '814 Patent under 35 U.S.C. § 271(b).

54. Neuronetics's customers have infringed and continue to infringe the '814 Patent by using the NeuroStar TMS System purchased from Neuronetics. Through its product manuals and/or sales and marketing activities, Neuronetics solicits, instructs, encourages, and aids and abets its customers to purchase and use the NeuroStar TMS System.

55. On information and belief, Neuronetics's actions have been with specific intent to cause infringement or Neuronetics has been willfully blind to the resulting infringement because Neuronetics has had actual knowledge of the '814 Patent and knowledge that its acts were inducing infringement of the '814 Patent since before the filing of this action.

56. Neuronetics's direct and indirect infringement of the '814 Patent has been willful.

Neuronetics's Knowledge of the '814 Patent

57. On information and belief, Neuronetics has known about the '814 Patent since at least November 22, 2004.

58. Neuronetics had knowledge of the '814 Patent before the filing of this action.

59. Despite its knowledge of the '814 Patent, Neuronetics has made, used, sold, offered for sale, and/or imported into the United States products covered by one or more claims of the '814 Patent, including the NeuroStar TMS System. Neuronetics infringement of the '814 Patent has been willful and intentional because it has continued its acts of infringement with knowledge of the '814 Patent and despite an objectively high likelihood its actions constituted infringement of a valid patent.

60. Page iv of the NeuroStar TMS User Manual states as follows:

Patents

Equipment and software that comprise the NeuroStar TMS Therapy System are covered by the following U.S. patents with other patents pending:

6,255,815	6,086,525	7,104,947 B2	D571,920 S	7,651,459 B2
6,161,757	6,425,852	7,153,256 B2	7,396,326 B2	7,824,324 B2
5,725,471	6,491,620	7,320,664 B2	7,560,058 B2	7,857,726 B2
6,132,361	6,926,660 B2	7,614,996 B2	7,601,115 B2	6,527,695
7,744,523	7,963,903	D646,393	8,088,058	8,118,722

61. On March 5, 2004, U.S. Patent Application No. 10/794,110, which ultimately issued as U.S. Patent No. 6,926,660, was filed at the United States Patent & Trademark Office. An information disclosure statement filed on January 7, 2005, cited the '814 Patent.

62. On September 8, 2003, U.S. Patent Application No. 10/657,296, which ultimately issued as U.S. Patent No. 7,153,256, was filed at the United States Patent & Trademark Office. An information disclosure statement filed on November 22, 2004, cited the '814 Patent.

63. On March 4, 2004, U.S. Patent Application No. 10/792,994, which ultimately issued as U.S. Patent No. 7,320,664, was filed at the United States Patent & Trademark Office. An information disclosure statement filed on December 6, 2004, cited the '814 Patent.

64. On January 4, 2006, U.S. Patent Application No. 11/325,660, which ultimately issued as U.S. Patent No. 7,560,058, was filed at the United States Patent & Trademark Office. An information disclosure statement filed on October 16, 2007, cited the '814 Patent.

65. On May 24, 2004, U.S. Patent Application No. 10/852,349, which ultimately issued as U.S. Patent No. 7,601,115, was filed at the United States Patent & Trademark Office. An information disclosure statement filed on November 22, 2004, cited the '814 Patent.

66. On December 5, 2003, U.S. Patent Application No. 10/729,243, which ultimately issued as U.S. Patent No. 7,614,996, was filed at the United States Patent & Trademark Office. An information disclosure statement filed on November 22, 2004, cited the '814 Patent.

67. On January 6, 2004, U.S. Patent Application No. 10/752,164, which ultimately issued as U.S. Patent No. 7,651,459, was filed at the United States Patent & Trademark Office. An information disclosure statement filed on May 8, 2009, cited the '814 Patent.

68. On June 7, 2007, U.S. Patent Application No. 11/759,537, which ultimately issued as U.S. Patent No. U.S. Patent No. 7,744,523, was filed at the United States Patent & Trademark Office. An information disclosure statement filed on March 25, 2009, cited the '814 Patent.

69. On July 27, 2005, U.S. Patent Application No. 11/191,106, which ultimately issued as U.S. Patent No. U.S. Patent No. 7,824,324, was filed at the United States Patent & Trademark Office. An information disclosure statement filed on December 6, 2005, cited the '814 Patent.

70. On August 26, 2005, U.S. Patent Application No. 11/213,415, which ultimately issued as U.S. Patent No. U.S. Patent No. 7,963,903, was filed at the United States Patent & Trademark Office. An information disclosure statement filed on December 12, 2005, cited the '814 Patent.

71. On January 20, 2005, U.S. Patent Application No. 11/039,267, which ultimately issued as U.S. Patent No. U.S. Patent No. 8,088,058, was filed at the United States Patent & Trademark Office. An information disclosure statement filed on August 11, 2011, cited the '814 Patent.

72. In addition to the instances above, Neuronetics has knowledge of the '814 Patent as of the filing of this lawsuit, and its ongoing infringement is willful.

73. Neuro-Cardiac has been and continues to be damaged as a result of Neuronetics's infringing conduct. Neuronetics is therefore liable to Neuro-Cardiac in an amount that adequately compensates Neuro-Cardiac for Neuronetics's infringement, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

74. Neuronetics markets and sells other products that are not covered by the claims of the '814 Patent but that are sold with or in conjunction with the Accused Products. Accordingly, Neuro-Cardiac is entitled to collect damages from Neuronetics for convoyed sales of certain non-patented items.

75. Neuronetics failed to obtain permission from Neuro-Cardiac to make, use, sell, offer to sell, or import products incorporating the inventions claimed in the '814 Patent.

76. For each count of infringement listed below, Neuro-Cardiac incorporates and re-states the allegations contained in the preceding paragraphs above including these General Allegations as if fully set forth in each count of infringement.

Count I – INFRINGEMENT OF THE '814 Patent

77. Neuro-Cardiac incorporates herein the allegations made in paragraphs 1–76.

78. Neuronetics has been and is now directly infringing the '814 Patent in violation of 35 U.S.C. § 271(a) by making, using, selling, offering for sale, and/or importing into the United States products that are covered by at least Claim 1 of the '814 Patent, including but not limited to the Accused Product. Neuronetics's direct infringement of the '814 Patent is willful.

79. In addition, Neuronetics has been and is now indirectly infringing the '814 Patent in violation of 35 U.S.C. § 271(b) by actively inducing its customers to directly infringe the '814 Patent. For example, Neuronetics sells the Accused Product to its customers for the express purpose of having its customers use the Accused Product in violation of 35 U.S.C. § 271(a). Additionally, Neuronetics instructs its customers how to use the Accused Product in an infringing way via its website and instruction manuals. Neuronetics solicits, instructs, aids and abets, and encourages its customers to purchase and use the Accused Product. Neuronetics's inducement of infringement of the '814 Patent is willful.

80. On information and belief, Neuronetics has known about the '814 Patent since before the filing of this action. Neuronetics acted despite an objectively high likelihood that its actions constituted infringement of a valid patent. Neuronetics was aware that its actions would cause infringement of the '814 Patent and acted with intent to encourage direct infringement of the '814 Patent.

81. As a result of Neuronetics's infringement of the '814 Patent, Neuro-Cardiac has suffered and is owed monetary damages that are adequate to compensate it for the infringement under 35 U.S.C. § 284, but in no event less than a reasonable royalty.

DEMAND FOR A JURY TRIAL

82. Pursuant to Rule 38 of the Federal Rules of Civil Procedure, Neuro-Cardiac demands a trial by jury on all issues triable of right by a jury.

PRAYER FOR RELIEF

83. WHEREFORE, Neuro-Cardiac respectfully requests that this Court enter judgment in its favor and grant the following relief:

84. A judgment that Neuronetics has directly infringed one or more claims of the '814 Patent;

85. A judgment that Neuronetics has indirectly infringed one or more claims of the '814 Patent;

86. A judgment that Neuronetics's infringement of the '814 Patent has been willful.

87. A judgment and order requiring Neuronetics to pay Neuro-Cardiac past and future damages under 35 U.S.C. § 284, including for supplemental damages arising from any continuing post-verdict infringement for the time between trial and entry of the final judgment with an accounting, as needed, as provided by 35 U.S.C. § 284;

88. A judgment and order finding that this is an exceptional case and awarding Neuro-Cardiac its reasonable attorneys' fees pursuant to 35 U.S.C. § 285;

89. A judgment and order requiring Neuronetics to pay Neuro-Cardiac reasonable ongoing royalties on a going-forward basis after final judgment;

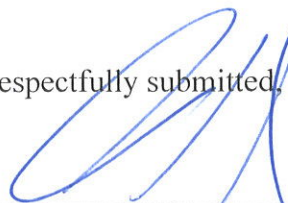
90. A judgment and order requiring Neuronetics to pay Neuro-Cardiac pre-judgment and post-judgment interest on the damages award;

91. A judgment and order requiring Neuronetics to pay Neuro-Cardiac's costs; and

92. Such other and further relief as the Court may deem just and proper.

Dated: January 11, 2018

Respectfully submitted,



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